Who Shall Inherit the Earth?

THE STRUGGLE BETWEEN MAN and insects began long before the dawn of civilization, has continued without cessation to the present time, and will continue, no doubt, as long as the human race endures. It is due to the fact that both men and certain insect species constantly want the same things at the same time. Its intensity is owing to the vital importance to both of the things they struggle for, and its long continuance is due to the fact that the contestants are so equally matched. We commonly think of ourselves as the lords and conquerors of nature, but insects had thoroughly mastered the world and taken possession of it long before man began the attempt. They had, consequently, all the advantages of a possession of the field when the contest began, and they have disputed every step of our invasion of their original domain so persistently and so successfully that we can even yet scarcely flatter ourselves that we have gained any very important advantage over them. Here and there a truce has been declared, a treaty made, and even a partnership established, advantageous to both parties of the contract—as with the bees and silkworms, for example; but wherever their interests and ours are diametrically opposed, the war still goes on and neither side can claim a final victory. If they want our crops, they still help themselves to them. If they wish the blood of our domestic animals, they pump it out of the veins of our cattle and our horses at their leisure and under our very eyes. If they choose to take up their abode with us, we cannot wholly keep them out of the houses we live in. We cannot even protect our very persons from their annoying and pestiferous attacks, and since the world began, we have never yet exterminated—we probably never shall exterminate—so much as a single insect species. They have, in fact, inflicted upon us for ages the most serious evils without our even knowing it.

This statement, by S. A. Forbes, is taken from an article which appeared in the bulletin of the Illinois State Laboratory of Natural History in 1915. Probably some would say that in 40 years it has gone out of date. We find support for confidence in victory over the threat of its theme, but the battle is not yet won. For example, in "Insects," *The Yearbook of Agriculture*, 1952, Charles F. Brannan, the Secretary of Agriculture at that time, had this to say:

"Although the science of entomology has made great progress in the past two decades, the problems caused by insects seem to be bigger than ever. We have more insect pests, although we have better insecticides to use against them and better ways to fight them. Effective though our quarantines are against foreign pests, some of them are slipping through and require vigorous attention. Many aspects need to be considered in the control of insects. We must stop the destruction of our crops and forests, but the insecticides we use must leave no dangerous residues on foods, destroy no beneficial wildlife, and do no damage to our soils.

"We thought we had some of the problems solved when we got such good results from the new insecticides. DDT, for example. . . . In less than a decade, however, DDT was found to be a failure against the body louse in Korea. . . . It failed to control mosquitoes in some places. In 1952 the house fly was no longer controlled in many places by any of the residual-type insecticides in use, and it seemed likely that other pests in time would develop resistance.

"The answer, like the challenge, is clear.

"We dare not think of any knowledge—least of all knowledge of living things—as static, fixed, or finished. We need to push on to new horizons on thinking and investigation and, reaching them, see newer horizons. We need a longer view in research and an appreciation that it can have two goals: first, practical, everyday results that can be expressed in terms of definite methods, tools, and advice, and second, fundamental, basic knowledge, on which the applied science rests."